



CASE STUDY

HZERO Miniature Train Museum

12 projectors with 1-chip DLP technology create the immersive backdrop for one of the largest model railways in Europe.

Client: HZERO museo del treno in miniatura

Location: Florence, Italy

Product(s) supplied:

PT-RZ790

ET-DLE020

Challenge

To design an appropriate background for an authentic modeling masterpiece, featuring immersive images and sounds that enhance the visitor experience without causing any distractions.

Solution

12 Panasonic projectors with ultra-short ET-DLE020 lenses provide large-scale projections without shadows, perfectly synchronized and controlled through a simple system managed by a single device.

Located in Florence, just steps from Santa Maria Novella station, the HZERO Miniature Train Museum occupies the space of a former cinema, where visitors can admire one of Europe's largest railway models. An extraordinary immersive projection, created using Panasonic projectors, spans over 20-meter-long walls, serving as the backdrop.

In Florence, next to the Santa Maria Novella station, within the former Ariston cinema, visitors can experience something truly unique: the cinema's auditorium now houses a 280-square-meter railway model, a remarkable creation by Marquis Giuseppe Paternò Castello di San Giuliano. He dedicated more than forty years of his life and passion to the project. In his later years, he expressed the wish for his creation to be transformed into a museum. His children, Diego, Giulia, and Maria, turned this wish into reality by founding HZERO, a museum named after the golden ratio for scale reduction (1:87, referred to as HZERO by modelers).

A team of highly skilled professionals brought HZERO to life: world-renowned curator Alberto Salvadori designed the exhibit; Karmachina Multimedia Design Studio created the animations, which are projected across the walls by Panasonic PT-RZ790 projectors, forming the immersive backdrop to the model; Tempo Reale, a studio founded by Luciano Berio, composed the soundtrack; and Mediacare's system integrators managed the audio and video integration.



"The model, which features nearly a kilometer of track with over seventy trains running simultaneously, occupies almost the entire space that once made up the Ariston cinema's auditorium. On the long walls and the rear wall, moving artworks created by Karmachina and set to music by Tempo Reale are projected continuously. This projection is not just decorative; it plays a crucial role in the visitor experience. Once past the ticket counter and through the door leading to the model, visitors embark on a true journey, during which the projected images, music, and lights reflect the passage of time—showing the 24 hours of a day and the four seasons of the year."

**Alberto Salvadori**

Curatore

Museo del treno in miniatura



For the integration, the creators of HZERO also aimed for excellence, turning to the Medicare team, which has been working at the highest level in the entertainment industry for years. Massimo Carli, the company's founder, explains: "The client wanted an impactful installation, but one that would also be easy to manage and reliable."

The Solution: Panasonic Projectors with Ultra-Short ET-DLE020 Lenses

Here's how Medicare's founder describes the solution and Panasonic's pivotal role in it:

"Technically, we needed to project onto three walls—two 26 meters long and one 13 meters long, with a height of about 3.20 meters. We divided each wall into sections of 5 meters by 3.20 meters, which we covered using blending projections. This approach also helped us overcome the challenge posed by two doors on the shorter side. We used twelve Panasonic PT-RZ790 projectors—five for the long sides and two for the short side."

**Massimo Carli**

Fondatore
MediaCare AV



Carli elaborates on the most challenging aspect of the project:

"La proiezione degli sfondi occupa l'intera parete e inizia a poco più di un metro da terra, quindi i proiettori dovevano essere posizionati molto vicini alla parete, per evitare le ombre dei visitatori. Panasonic ha trovato la soluzione, permettendoci di utilizzare delle ottiche ultra-grandangolari che all'epoca (2016-2017) non erano ancora in commercio, ovvero le ottiche ET-DLE020, con rapporto 0,28:1: si tratta di ottiche dirette, senza specchi, molto duttili e dotate di una lente che elimina qualsiasi distorsione, tant'è che, pur con cinque proiettori che operano insieme su una parete di oltre venti metri, il blending risulta perfetto. Con queste ottiche si ottengono risultati pari a quelli delle ottiche a specchio, se non addirittura migliori, evitando inconvenienti quali i vincoli nel posizionamento della macchina e la perdita di luminosità. I proiettori sono posizionati a 1,65 metri di distanza dalla parete e ciascuno di essi copre cinque metri di base per tre e venti di altezza, con cinquanta centimetri di blending. Il contenuto della proiezione è gestito tramite il software Geometry Manager Pro di Panasonic, che si occupa di correggere le distorsioni, regolare il blending e mettere in quadro l'immagine. Il video arriva ai proiettori attraverso lo standard Panasonic Digital Link (compatibile HD-BaseT), con un cavo di rete proveniente dalla sala regia, che si trova al piano superiore (circa 75 metri di cavo Cat 6A, da cui passano anche tutti i controlli ethernet per la gestione del proiettore). The projection covers the entire wall, starting just over a meter from the ground. Therefore, the projectors had to be placed very close to the wall to avoid shadows cast by visitors. Panasonic provided the solution by supplying ultra-wide-angle lenses that were not yet on the market in 2016-2017: the ET-DLE020 lenses with a 0.28:1 ratio. These direct lenses—without mirrors—are very versatile and feature a lens that eliminates distortion. Even with five projectors working together on a wall over 20 meters long, the blending was flawless. These lenses perform as well as or even better than mirror lenses, while avoiding issues like placement limitations and brightness loss. The projectors are positioned 1.65 meters from the wall, each covering five meters in width and 3.20 meters in height, with fifty centimeters of blending. The projection content is managed using Panasonic's Geometry Manager Pro software, which handles distortion correction, blending, and image framing. The video is transmitted to the projectors via Panasonic's Digital Link standard (compatible with HD-BaseT) over a network cable from the control room located on the upper floor (about 75 meters of Cat 6A cable, through which all Ethernet controls for managing the projectors also pass). The entire system is controlled through a tablet: in the morning, the museum attendant arrives, turns on the tablet, and finds a single button labeled 'System Power On.' They press it, and within three minutes, all projectors are on, ready for alignment checks and projection. Remote assistance is available, but to date, there have been no issues."

Why the Integrator Chose Us

In addition to the projectors' color accuracy and reliability, other factors led the integrator to choose Panasonic. As Carli explains: "A key factor was the ultra-wide-angle lenses, whose performance impressed us so much that we decided to stock up on them for upcoming shows we will support at the Ravenna theater. Moreover, Panasonic was the obvious choice for the creatives at Karmachina, who had already experienced the brand's quality in the past. Furthermore," Carli adds, "it's rare to find manufacturers offering DLP projectors with such high resolutions as the 7,000-pixel setup we use at HZERO. Many manufacturers opt for LCD models, which suffer from ghosting when fast motion is displayed. All these factors, along with Panasonic's reliability and excellent pre- and post-sale support, were decisive in our decision."

